

**WEST**[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show S Numbers](#)[Edit S Numbers](#)[Preferences](#)[Cases](#)**Search Results -**

Terms	Documents
(data conversion) near (normaliz\$5)	7

Database: 

US Patents Full-Text Database	▲
US Pre-Grant Publication Full-Text Database	
JPO Abstracts Database	
EPO Abstracts Database	
Derwent World Patents Index	
IBM Technical Disclosure Bulletins	▼

Search:

L2

[Refine Search](#)[Recall Text](#)[Clear](#)**Search History**DATE: Thursday, February 14, 2002 [Printable Copy](#) [Create Case](#)**Set Name   Query**  
side by side**Hit Count   Set Name**  
result set

DB=USPT,PGPB,TDBD; PLUR=YES; OP=ADJ

<u>L2</u>	(data conversion) near (normaliz\$5)	7	<u>L2</u>
<u>L1</u>	data conversion	6235	<u>L1</u>

END OF SEARCH HISTORY

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 7 of 7 returned.**☐ 1. Document ID: US 6336128 B1

L2: Entry 1 of 7

File: USPT

Jan 1, 2002

US-PAT-NO: 6336128

DOCUMENT-IDENTIFIER: US 6336128 B1

TITLE: Data-processing-aided electronic control system for a motor vehicle

DATE-ISSUED: January 1, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Eisenmann; Joachim	Suessen			DEX
Huber; Martin	Kornwestheim			DEX
Lanches; Philipp	Esslingen			DEX
Aminger; Hans-Juergen	Ebersbach			DEX
Koehn; Matthias	Metzingen			DEX

US-CL-CURRENT: 709/200; 709/201, 713/1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC
Draw Desc	Image										

☐ 2. Document ID: US 6226544 B1

L2: Entry 2 of 7

File: USPT

May 1, 2001

US-PAT-NO: 6226544

DOCUMENT-IDENTIFIER: US 6226544 B1

TITLE: Living body internal active source estimation apparatus

DATE-ISSUED: May 1, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamazaki; Toshimasa	Tokyo			JPX
Kamijyo; Kenichi	Tokyo			JPX
Kiyuna; Tomoharu	Tokyo			JPX

US-CL-CURRENT: 600/408; 324/200, 324/210, 324/212, 324/307, 324/308, 324/309, 600/409, 600/524

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC
Draw Desc	Image										

☐ 3. Document ID: US 5877811 A

L2: Entry 3 of 7

File: USPT

Mar 2, 1999

US-PAT-NO: 5877811

DOCUMENT-IDENTIFIER: US 5877811 A

TITLE: Interchangeable lens type camera apparatus

DATE-ISSUED: March 2, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Iijima; Ryunosuke	Ebina			JPX
Mabuchi; Toshiaki	Tama			JPX
Ohta; Seiya	Yokohama			JPX

US-CL-CURRENT: 348/375; 348/220, 348/373, 396/71

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWC

☐ 4. Document ID: US 5680784 A

L2: Entry 4 of 7

File: USPT

Oct 28, 1997

US-PAT-NO: 5680784

DOCUMENT-IDENTIFIER: US 5680784 A

TITLE: Method of controlling form of strip in rolling mill

DATE-ISSUED: October 28, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tateno; Junichi	Chiba			JPX
Asano; Kazuya	Chiba			JPX
Kaji; Takayuki	Chiba			JPX
Hoshino; Masashi	Chiba			JPX
Tsuzuki; Satoshi	Chiba			JPX
Shiozumi; Motoji	Kobe			JPX
Kamimaru; Akinobu	Kobe			JPX
Osaka; Chikara	Chiba			JPX

US-CL-CURRENT: 72/8.7; 72/11.7, 72/365.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWC

☐ 5. Document ID: US 5649180 A

L2: Entry 5 of 7

File: USPT

Jul 15, 1997

DATE-ISSUED: July 21, 1992

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamamoto; Jun	Hamamatsu			JPX

US-CL-CURRENT: 84/19; 84/462

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWC
Draw Desc	Image									

[Generate Collection](#)[Print](#)

Terms	Documents
(data conversion) near (normaliz\$5)	7

**Display Format:**[Change Format](#)[Previous Page](#)[Next Page](#)

**WEST**

Help

Logout

Interrupt

Main Menu

Search Form

Posting Counts

Show S Numbers

Edit S Numbers

Preferences

Cases

**Search Results -**

Terms	Documents
(data conversion) near (interpolat\$4)	3

Database:

US Patents Full-Text Database  
 US Pre-Grant Publication Full-Text Database  
 JPO Abstracts Database  
 EPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L4

Refine Search

Recall Text

Clear

**Search History**
**DATE:** Thursday, February 14, 2002    [Printable Copy](#)    [Create Case](#)
**Set Name**    **Query**  
 side by side

**Hit Count**    **Set Name**  
                     result set

DB=USPT,PGPB,TDBD; PLUR=YES; OP=ADJ

<u>L4</u>	(data conversion) near (interpolat\$4)	3	<u>L4</u>
<u>L3</u>	(data conversion) near (look-up table)	9	<u>L3</u>
<u>L2</u>	(data conversion) near (normaliz\$5)	7	<u>L2</u>
<u>L1</u>	data conversion	6235	<u>L1</u>

END OF SEARCH HISTORY

**WEST**

Generate Collection

Print

**Search Results - Record(s) 1 through 3 of 3 returned.**☐ 1. Document ID: US 4805034 A

L4: Entry 1 of 3

File: USPT

Feb 14, 1989

US-PAT-NO: 4805034

DOCUMENT-IDENTIFIER: US 4805034 A

TITLE: Color video signal transmission system

DATE-ISSUED: February 14, 1989

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kitamura; Hiroyuki	Hiratsuka			JPX
Ota; Yoshihiko	Yokosuka			JPX

US-CL-CURRENT: 386/34; 386/36

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 2. Document ID: US 4780769 A

L4: Entry 2 of 3

File: USPT

Oct 25, 1988

US-PAT-NO: 4780769

DOCUMENT-IDENTIFIER: US 4780769 A

TITLE: Recording and reproducing apparatus for time compressed video signals wherein said signals are expanded and converted into two separate channels before recording

DATE-ISSUED: October 25, 1988

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Numakura; Toshihiko	Kanagawa			JPX
Kanouta; Keiji	Kanagawa			JPX
Mizuta; Masashi	Kanagawa			JPX
Ishimaru; Masayoshi	Tokyo			JPX
Nagai; Michio	Saitama			JPX

US-CL-CURRENT: 386/20; 386/33

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 3. Document ID: US 4632579 A

L4: Entry 3 of 3

File: USPT

Dec 30, 1986

US-PAT-NO: 4632579

DOCUMENT-IDENTIFIER: US 4632579 A

TITLE: Printing system in dot printer

DATE-ISSUED: December 30, 1986

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Takano; Hirokuni	Tokyo			JPX
Shimizu; Tadao	Tokyo			JPX
Izaki; Osamu	Tokyo			JPX

US-CL-CURRENT: 400/124.07; 101/93.04, 358/1.9

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWC

Generate Collection

Print

Terms	Documents
(data conversion) near (interpolat\$4)	3

**Display Format:**

CIT

Change Format

[Previous Page](#)[Next Page](#)

# Derivatives

## History of the Derivative

The derivative has two basic facets, the geometric and the computational. In addition, the applications of the derivative are manifold: the derivative plays many important roles in mathematics itself; it has uses in physics, chemistry, engineering, technology, sciences, economics, and much more, and new applications are devised every day.

The origin of the derivative resides in the classical geometric *tangent* problems, e.g., to determine a straight line that intersects a given curve in only one given point. Euclid (ca. 300 B.C.) proved the familiar high school geometry theorem to the effect that the line tangent to a circle at any point  $P$  is perpendicular to the radius at  $P$ . Archimedes (287--212 B.C.) had a procedure for finding the tangent to his spiral. And Apollonius (ca. 262--190 B.C.) described methods, all somewhat different, for determining tangents to parabolas, ellipses, and hyperbolas. But these were just geometric problems that were studied for their own very limited interests; the ancient Greeks did not perceive any common thread or other value to these theorems.

Problems of motion and velocity, also basic to our understanding of the derivative today, also originated with the ancient Greeks, although these questions were originally treated more philosophically than mathematically. The four paradoxes of Zeno (ca. 450 B.C.) hinge on difficulties with understanding *instantaneous velocity* without having a grasp of the derivative. In the *Physics* of Aristotle (384--322 B.C.), motion problems are closely associated with ideas of continuity and the infinite (i.e. infinitely small and infinitely large magnitudes). In medieval times, Thomas Bradwardine (1295--1349) and his colleagues at Merton College, Oxford, made the first efforts to transform some of Aristotle's ideas about motion into quantitative statements. In particular, the notion of instantaneous velocity became measurable, at least in theory; today, it is the derivative (or rate of change) of the distance with respect to the time.

It was Galileo Galilei (1564--1642) who established the principle that mathematics was the indispensable tool for studying motion and, in general, science: "Philosophy [science and nature] is written in that great book which ever lies before our eyes -- I mean the universe -- but we cannot understand it if we do not first learn the language ... The book is written in the mathematical language ...." Galileo studied motion geometrically; he used the classical proportionalities of Euclid and properties of the conics from Apollonius to derive relationships among distance, velocity, and acceleration. Today, these variable quantities are basic applications of the derivative.

Interest in tangents to curves reappeared in the 17<sup>th</sup> century as a part of the development of analytic geometry. Because equations were then used to describe curves, the number and variety of curves increased tremendously over those studied in classical times. For instance, Pierre Fermat (1601--1665) was the first to consider the idea of a whole *family* of curves at once. He called these *higher parabolas*, curves of the form,  $y = kx^n$ , where  $k$



is constant and  $n = 2, 3, 4, \dots$ . The introduction of algebraic symbols as a tool for studying the geometry of curves contributed significantly to the development of the derivative, the integral, and calculus. On the other hand, because correct geometric results and conclusions could be attained more easily using algebra than by geometric reasoning, the standards of logical rigor that had been pioneered by the ancient Greeks were relaxed in many calculus problems, and this (among other factors) led to some spirited and even bitter controversies. Fermat devised an algebraic procedure that he called *adequality* to determine the highest (maximum) and the lowest (minimum) point(s) on a curve; geometrically, he was finding the point(s) where the tangent to the curve had slope zero.

René Descartes (1596--1650) had the insight to foresee the importance of the tangent when, in his *Geometry*, he wrote, "And I dare say that this [finding the *normal*, or perpendicular to a curve, from which we can easily find the tangent] is not only the most useful and general problem in geometry that I know, but even that I have ever desired to know." Descartes devised a double root procedure for finding the normal and thus the tangent to a curve. As a result of the translation of Descartes' *Geometry* into Latin by Frans van Schooten (1615--1661) and the extensive explanations by van Schooten, Florimonde de Beaune (1601--1652) and Johan Hudde (1628-1704), the principles and benefits of analytic geometry became more widely known. In particular, Hudde simplified Descartes' double root technique to determine maximum and minimum points on a curve; the double root procedure was rediscovered by Christiaan Huygens (1629-1695). Then, by modifying Fermat's tangent process, Huygens devised a sequence of algebraic steps that produced the *inflection point(s)* of a curve; we will see that this requires the second derivative. René François de Sluse (1622--1685) derived an algebraic technique that led to the *slope* of the tangent to a curve. In the late 1650s, there was a good deal of correspondence between Huygens, Hudde, van Schooten, Sluse, and others concerning tangents of many algebraic curves; Hudde and Sluse especially sought simpler and standardized algebraic methods that could be applied to a greater variety of curves. For Gilles Personne de Roberval (1602--1675), a curve was the path of a moving point, and he derived a mechanical method for finding the tangent to many curves, including the cycloid. But Roberval's method could not be generalized to include more curves.

Isaac Newton (1642--1727) began developing his "fluxional calculus," among his earliest scientific endeavors in 1663. For Newton, motion was the "fundamental basis" for curves, tangents, and related calculus phenomena, and he derived his *fluxions* from Hudde's version of the double root procedure. Newton extended this technique as a method for finding the *curvature* of a curve, a feature that we now know is an application of the second derivative. In 1666, 1669, and 1671, Newton summarized and revised his calculus work, and these manuscripts were circulated among a good number of his colleagues and friends. Yet, though he continued to return to calculus problems at various times later in his scientific life, Newton's calculus works were not published until 1736 and 1745.

With some tutoring and advice from Huygens and others, Gottfried Wilhelm Leibniz (1646--1716) developed his differential and integral calculus during the years 1673--1676 while he was living as a diplomat in Paris. On a short trip to London, where he attended a meeting of the Royal Society in 1673, Leibniz learned of Sluse's method of finding tangents to algebraic curves. Leibniz had little inclination to derive these rules and even less interest in the mathematical foundations (i.e., limits) required, but he did perfect the modern formulas and notation for the derivative in his famous paper, "New methods for maximums and minimums, as well as tangents, which is neither impeded by fractional nor irrational quantities, and a remarkable calculus for them." (1684)

Here is the first published work in *calculus* and in fact the first use of the word "calculus" in the modern sense. Now, anyone could solve tangent problems without mastering geometry, one could simply use the "calculus" of Leibniz's formulas.

Newton and Leibniz are sometimes said to have "invented" the calculus. As we can see, that is very much of an oversimplification. Rather, as Richard Courant (1888--1972) wisely observed, calculus has been "a dramatic intellectual struggle which has lasted for 2500 years." After 1700, circumstances led to one of the saddest and most disgraceful episodes in all of the history of science: the priority dispute between Leibniz and Newton, and even more between their followers, over who should receive credit for the calculus. Each made major contributions to the derivative, the integral, infinite series, and most of all to the Fundamental Theorem of Calculus. The charges of plagiarism and other ugly attacks were irrelevant to the mathematics done by each man, but the accusations and counter-slurs escalated into schisms between mathematicians and scientists in England (loyal to Newton) and on the European continent (followers of Leibniz) which for more than a century even led to nationalistic xenophobia.

The first book on the differential calculus was *Analysis of Infinitely Small Quantities for the Understanding of Curved Lines* (1696) by the Marquis de l'Hospital (1661--1704). Much of this work was actually due to Johann Bernoulli (1667--1748) and followed Leibniz's treatment of derivatives, maximums, minimums and other analyses of curves. But l'Hospital's method of determining the radius of curvature was very similar to that of Newton. Jakob Bernoulli (1654-1705) and his younger brother Johann led the way in spreading the word about the power of Leibniz's calculus formulas by proposing and solving several challenging problems (the *catenary* problem and the *brachistochrone* problem are two examples) for which calculus was required. Leibniz, Newton, and Huygens also solved these problems. These problems and others led to the development of differential equations and calculus of variations, whole new fields of mathematics dependent upon calculus.

In England, Thomas Simpson's (1710--1761) *New Treatise of Fluxions* (1737) provided the first derivative of the sine function. In 1734, Bishop George Berkeley (1685--1753) published *The Analyst*, a scathing attack on Newton's lack of rigorous foundations for his fluxions. Berkeley acknowledged the accuracy of Newton's formulas and correctness of their far-reaching applications in physics and astronomy, but he criticized the "infinitely small quantities" and the "evanescent increments" of the foundations of the derivative. Colin Maclaurin (1698--1746) tried to defend Newton in his *Treatise of Fluxions* (1742), and he derived derivatives for logarithms and exponentials and expanded Simpson's formulas to include the derivatives of the tangent and the secant.

On the continent, Maria Agnesi (1718--1799) followed Leibniz and L'Hospital in her calculus book, *Analytical Institutions* (1748). Leonhard Euler (1707--1783) took a major step toward establishing a firmer foundation for calculus in his *Introduction to the Analysis of the Infinite* (1748) when he introduced *functions* (as opposed to curves) as the objects to which the derivative and the other techniques of the calculus would be applied. By *function*, Euler meant some kind of an "analytic expression;" his conception was not so broad as our modern definition. In this publication, he also introduced the term *analysis* as a modern name for calculus and related higher mathematics. In his *Methods of Differential Calculus* (1755), Euler defined the derivative as "the method of determining the ratios of the evanescent increments which functions receive to those of the

evanescent increments of the variable quantities, of which they are the functions," which sounds very unscientific today. Even so, Euler dealt with several special cases of the chain rule, he introduced differential equations, and he treated maximums and minimums without using any diagrams or graphs. In 1754, in the famous French *Encyclopédie*, Jean le Rond d'Alembert (1717--1783) asserted that the "most precise and neatest possible definition of the differential calculus" is that the derivative is the limit of certain ratios as the numerators and denominators get closer and closer to zero, and that this limit produces certain algebraic expressions that we call the *derivative*.

At the end of the 18<sup>th</sup> century, Joseph Louis Lagrange (1736--1813) attempted to reform calculus and make it rigorous in his *Theory of Analytic Functions* (1797). Lagrange intended to give a purely algebraic form for the derivative, without any recourse to geometric intuition or graphs or diagrams and without any help from d'Alembert's limits. Lagrange did invent the prime notation we now use for derivatives, and the logical development of his calculus was admirable in other respects, but his effort to provide a firm foundation for the calculus failed because his conception of the derivative was based on certain properties of infinite series which we now know are not true.

Finally, in the early years of the 19<sup>th</sup> century, the modern definition of the derivative was given by Augustin Louis Cauchy (1789--1857) in his lectures to his engineering students. In his *Résumé of Lessons given at l'Ecole Polytechnique in the Infinitesimal Calculus* (1823), Cauchy stated that the *derivative* is:

the limit of  $[f(x + i) - f(x)] / i$  as  $i$  approaches 0. The form of the function which serves as the limit of the ratio  $[f(x + i) - f(x)] / i$  will depend on the form of the proposed function  $y = f(x)$ . In order to indicate this dependence, one gives the new function the name of *derived function*.

Cauchy went on to find derivatives of all the elementary functions and to give the chain rule. Of equal importance, Cauchy showed that the Mean Value Theorem for derivatives, which had appeared in Lagrange's work, was actually the cornerstone for proving a number of basic calculus theorems that had been taken for granted, e.g., descriptions of increasing and decreasing functions. Derivatives and the differential calculus were now established as a rigorous and modern part of calculus.

**WEST**[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show S Numbers](#)[Edit S Numbers](#)[Preferences](#)[Cases](#)**Search Results -**

Terms	Documents
(look up table or look-up table) same (grid point) same (interpolat\$4)	8

**Database:**

US Patents Full-Text Database  
 US Pre-Grant Publication Full-Text Database  
 JPO Abstracts Database  
 EPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

**Search:**

L3

[Refine Search](#)[Recall Text](#)[Clear](#)**Search History**
**DATE:** Thursday, February 14, 2002    [Printable Copy](#)    [Create Case](#)
**Set Name Query**  
 side by side

**Hit Count Set Name**  
 result set

DB=USPT,PGPB,TDBD; PLUR=YES; OP=ADJ

<u>L3</u>	(look up table or look-up table) same (grid point) same (interpolat\$4)	8	<u>L3</u>
<u>L2</u>	(look up table or look-up table) same (grid point)	21	<u>L2</u>
<u>L1</u>	(look up table or look-up table) same (grid point) same (data conversion)	0	<u>L1</u>

**END OF SEARCH HISTORY**

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 8 of 8 returned.**☐ 1. Document ID: US 6222648 B1

L3: Entry 1 of 8

File: USPT

Apr 24, 2001

US-PAT-NO: 6222648

DOCUMENT-IDENTIFIER: US 6222648 B1

TITLE: On line compensation for slow drift of color fidelity in document output terminals (DOT)

DATE-ISSUED: April 24, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wolf; Barry M.	Yorktown Heights	NY		
Castelli; Vittorio R.	Yorktown Heights	NY		
Solcz; Edward J.	Yorktown Heights	NY		

US-CL-CURRENT: 358/504; 358/501

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 2. Document ID: US 6204939 B1

L3: Entry 2 of 8

File: USPT

Mar 20, 2001

US-PAT-NO: 6204939

DOCUMENT-IDENTIFIER: US 6204939 B1

TITLE: Color matching accuracy inside and outside the gamut

DATE-ISSUED: March 20, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lin; Tsung-Nan	San Jose	CA		
Shu; Joseph	San Jose	CA		

US-CL-CURRENT: 358/518; 358/1.9, 358/504

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 3. Document ID: US 6178007 B1

L3: Entry 3 of 8

File: USPT

Jan 23, 2001

US-PAT-NO: 6178007

DOCUMENT-IDENTIFIER: US 6178007 B1

TITLE: Method for continuous incremental color calibration for color document output terminals

DATE-ISSUED: January 23, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Harrington; Steven J.	Webster	NY		

US-CL-CURRENT: 358/1.9; 358/518

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 4. Document ID: US 6023351 A

L3: Entry 4 of 8

File: USPT

Feb 8, 2000

US-PAT-NO: 6023351

DOCUMENT-IDENTIFIER: US 6023351 A

TITLE: Regularized printer LUT with improved accuracy

DATE-ISSUED: February 8, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Newman; Todd	Palo Alto	CA		

US-CL-CURRENT: 358/524; 358/522, 358/523, 358/530

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 5. Document ID: US 5883821 A

L3: Entry 5 of 8

File: USPT

Mar 16, 1999

US-PAT-NO: 5883821

DOCUMENT-IDENTIFIER: US 5883821 A

TITLE: Data transformation system performing data transformation employing interpolating operation

DATE-ISSUED: March 16, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Komaki; Takeshi	Yokohama			JPX

US-CL-CURRENT: 708/290; 358/525

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWC

☐ 6. Document ID: US 5715376 A

L3: Entry 6 of 8

File: USPT

Feb 3, 1998

US-PAT-NO: 5715376

DOCUMENT-IDENTIFIER: US 5715376 A

TITLE: Data transformation apparatus

DATE-ISSUED: February 3, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nakayama; Tadayoshi	Tokyo			JPX

US-CL-CURRENT: 358/1.9; 358/523, 358/525

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWC

☐ 7. Document ID: US 5706419 A

L3: Entry 7 of 8

File: USPT

Jan 6, 1998

US-PAT-NO: 5706419

DOCUMENT-IDENTIFIER: US 5706419 A

TITLE: Image capturing and processing apparatus and image capturing and processing method

DATE-ISSUED: January 6, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Matsugu; Masakazu	Chiba			JPX
Iijima; Katsumi	Hachioji			JPX
Yano; Kotaro	Yokohama			JPX
Kurahashi; Sunao	Kanagawa-ken			JPX
Kondo; Toshiaki	Fujisawa			JPX
Ishikawa; Motohiro	Yokohama			JPX

US-CL-CURRENT: 345/420

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWC

☐ 8. Document ID: US 4650926 A

L3: Entry 8 of 8

File: USPT

Mar 17, 1987

US-PAT-NO: 4650926

DOCUMENT-IDENTIFIER: US 4650926 A

TITLE: Electrographic system and method

DATE-ISSUED: March 17, 1987

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nakamura; Shoichiro	Columbus	OH		
Kable; Robert G.	Dublin	OH		

US-CL-CURRENT: 178/18.02; 178/18.05, 178/20.03, 345/178

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KMC

[Generate Collection](#)[Print](#)

Terms	Documents
(look up table or look-up table) same (grid point) same (interpolat\$4)	8

**Display Format:**[Change Format](#)[Previous Page](#)[Next Page](#)



**WEST**

Help

Logout

Interrupt

Main Menu

Search Form

Posting Counts

Show S Numbers

Edit S Numbers

Preferences

Cases

**Search Results -**

Terms	Documents
(look up table or look-up table) same (grid point) same (distance) same (dimension)	1

Database:

US Patents Full-Text Database  
 US Pre-Grant Publication Full-Text Database  
 JPO Abstracts Database  
 EPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

(look up table or look-up table) same  
 (grid point) same (distance) same  
 (dimension)

Refine Search

Recall Text

Clear

**Search History**
**DATE: Thursday, February 14, 2002**   [Printable Copy](#)   [Create Case](#)
**Set Name Query**

side by side

**Hit Count Set Name**

result set

*DB=USPT,PGPB,TDBD; PLUR=YES; OP=ADJ*

<u>L5</u>	(look up table or look-up table) same (grid point) same (distance) same (dimension)	1	<u>L5</u>
<u>L4</u>	(look up table or look-up table) same (grid point) same (conversion)	1	<u>L4</u>
<u>L3</u>	(look up table or look-up table) same (grid point) same (interpolat\$4)	8	<u>L3</u>
<u>L2</u>	(look up table or look-up table) same (grid point)	21	<u>L2</u>
<u>L1</u>	(look up table or look-up table) same (grid point) same (data conversion)	0	<u>L1</u>

**END OF SEARCH HISTORY**

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 1 of 1 returned.**☐ **1. Document ID: US 5706419 A**

L4: Entry 1 of 1

File: USPT

Jan 6, 1998

US-PAT-NO: 5706419

DOCUMENT-IDENTIFIER: US 5706419 A

TITLE: Image capturing and processing apparatus and image capturing and processing method

DATE-ISSUED: January 6, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Matsugu; Masakazu	Chiba			JPX
Iijima; Katsumi	Hachioji			JPX
Yano; Kotaro	Yokohama			JPX
Kurahashi; Sunao	Kanagawa-ken			JPX
Kondo; Toshiaki	Fujisawa			JPX
Ishikawa; Motohiro	Yokohama			JPX

US-CL-CURRENT: 345/420

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

KVMC

[Generate Collection](#)[Print](#)

Terms	Documents
(look up table or look-up table) same (grid point) same (conversion)	1

**Display Format:**[Change Format](#)[Previous Page](#)[Next Page](#)

**WEST**[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show S Numbers](#)[Edit S Numbers](#)[Preferences](#)[Cases](#)**Search Results -**

Terms	Documents
(tetrahedral interpolat\$3) same (data conversion)	1

Database:

US Patents Full-Text Database  
US Pre-Grant Publication Full-Text Database  
JPO Abstracts Database  
EPO Abstracts Database  
Derwent World Patents Index  
IBM Technical Disclosure Bulletins

Search:

L3

[Refine Search](#)[Recall Text](#)[Clear](#)**Search History**DATE: Thursday, February 14, 2002   [Printable Copy](#)   [Create Case](#)**Set Name   Query**  
side by side**Hit Count   Set Name**  
result set*DB=USPT,PGPB,TDBD; PLUR=YES; OP=ADJ*L3   (tetrahedral interpolat\$3) same (data conversion)1   L3L2   tetrahedral interpolat\$378   L2L1   tetrahedral interpolat\$30   L1

END OF SEARCH HISTORY

**WEST**

Generate Collection

Print

Search Results - Record(s) 1 through 1 of 1 returned.

☐ 1. Document ID: US 5729664 A

L3: Entry 1 of 1

File: USPT

Mar 17, 1998

US-PAT-NO: 5729664

DOCUMENT-IDENTIFIER: US 5729664 A

TITLE: Image processing apparatus and method for converting an input color image signal from one color space to another

DATE-ISSUED: March 17, 1998

## INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Ishikawa; Hiroshi

Kanagawa

JPX

US-CL-CURRENT: 358/1.9; 358/501, 358/518, 358/523

Full	Title	CIT.1	REV.1	CLS.1	REF.1	SEQ.1	ATT.1
CAW.1							

Generate Collection

Print

Terms	Documents
(tetrahedral interpolat\$3) same (data conversion)	1

Display Format:

Change Format

[Previous Page](#)[Next Page](#)

**WEST**[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show S Numbers](#)[Edit S Numbers](#)[Preferences](#)[Cases](#)**Search Results -**

Terms	Documents
(tetrahedral interpolat\$3) same (look-up table or look up table or lut) same (grid point)	2

Database:

US Patents Full Text Database  
 US Pre-Grant Publication Full Text Database  
 JPO Abstracts Database  
 EPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L5

[Refine Search](#)[Recall Text](#)[Clear](#)**Search History**
 DATE: Thursday, February 14, 2002    [Printable Copy](#)    [Create Case](#)
**Set Name Query**  
 side by side

**Hit Count Set Name**  
 result set

DB=USPT,PGPB,TDBD; PLUR=YES; OP=ADJ

<u>L5</u>	(tetrahedral interpolat\$3) same (look-up table or look up table or lut) same (grid point)	2	<u>L5</u>
<u>L4</u>	(tetrahedral interpolat\$3) same (look-up table or look up table or lut)	38	<u>L4</u>
<u>L3</u>	(tetrahedral interpolat\$3) same (data conversion)	1	<u>L3</u>
<u>L2</u>	tetrahedral interpolat\$3	78	<u>L2</u>
<u>L1</u>	tettrahedral interpolat\$3	0	<u>L1</u>

END OF SEARCH HISTORY

**WEST**

Generate Collection

Print

## Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: US 6023351 A

L5: Entry 1 of 2

File: USPT

Feb 8, 2000

US-PAT-NO: 6023351

DOCUMENT-IDENTIFIER: US 6023351 A

TITLE: Regularized printer LUT with improved accuracy

DATE-ISSUED: February 8, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Newman; Todd	Palo Alto	CA		

US-CL-CURRENT: 358/524; 358/522, 358/523, 358/530

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☒ 2. Document ID: US 5592591 A

L5: Entry 2 of 2

File: USPT

Jan 7, 1997

US-PAT-NO: 5592591

DOCUMENT-IDENTIFIER: US 5592591 A

TITLE: Reduced storage of pre-computed difference tables used in color space conversion

DATE-ISSUED: January 7, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rolleston; Robert J.	Penfield	NY		

US-CL-CURRENT: 358/1.5; 358/518

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

Generate Collection

Print

Terms	Documents
(tetrahedral interpolat\$3) same (look-up table or look up table or lut) same (grid point)	2

**Display Format:**

[Previous Page](#)      [Next Page](#)

US 093429170AP1



Creation date: 08-11-2004  
Indexing Officer: JACKERMANWILSON - JEAN ACKERMAN-WILSON  
Team: OIPEBackFileIndexing  
Dossier: 09342917

Legal Date: 02-19-2002

No.	Doccode	Number of pages
1	SRNT	60

Total number of pages: 60

Remarks:

Order of re-scan issued on .....